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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,150	12/01/2003	Masami Tomita	245003US0	1621

22850 7590 03/08/2005

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EXAMINER

DOE, JANIS L

ART UNIT PAPER NUMBER

1756

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/724,150	Applicant(s) TOMITA ET AL.	
	Examiner Janis L. Dote	Art Unit 1756	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 11 January 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-19 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-19 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 December 2003 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/1/03; 2/17/04; 2/23/04; 11/15/04; 12/08/04;
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

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1. The US patents listed on the "List of related cases" in the Information Disclosure Statements (IDS) filed on Dec. 1, 2003, have been crossed out by the examiner because the references are already listed on the form PTO-1449 filed on Dec. 1, 2003.

The examiner has considered only the material submitted by applicants, i.e., copies of the originally filed claims, abstract, and figures of the US applications listed on "List of related cases" in the Information Disclosure statements filed on Dec. 1, 2003, and Feb. 17, 2004.

The examiner has considered the US applications listed on "List of related cases" in the Information Disclosure statements filed on Nov. 15, 2004, Dec. 8, 2004, and Jan. 11, 2005.

2. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g., Henschel mixer [sic: HENSCHEL MIXER] at page 56, line 26, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be

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respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In instant claim 7, the recitation "a peak weight average molecular weight of from 1000 to 30000" (emphasis added) lacks antecedent basis in the specification. See page 10, lines 16-18, of the specification, which discloses "a peak molecular weight of from 1000 to 30000."

4. Claim 10 is objected to because of the following informalities:

The typographic error in the ratio "(r3/r1)" (emphasis added). The ratio should read "(r3/r2)" (emphasis added). See the instant specification at page 10, lines 25-26.

Appropriate correction is required.

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5. Claims 13 and 15 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The recitations in claims 13 and 15 do not further limit the toner composition recited in instant claim 1 from which claims 13 and 15 depend.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

9. Claims 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,430,526 (Ohkubo).

Ohkubo discloses an electrophotographic image forming apparatus that meets the structural components recited in instant claim 19. Fig. 1 and col. 2, line 56, to col. 3, line 56. The apparatus shown in Fig. 1 comprises an electrophotographic sensitive member 3 and a developing unit 5. Ohkubo also discloses a process cartridge that meets the structural components recited in instant claim 17. Fig. 2 and

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col. 3, line 65, to col. 4, line 8. The process cartridge shown in Fig. 2 comprises the photosensitive member 3, a charging roller 4, the developing device 5, and a cleaning unit 8.

Ohkubo does not exemplify the particular toner recited in the instant claims. However, the instant claims do not positively recite that the apparatus and process cartridge comprise the particular toner. Instant claim 17 merely recites "a developing device configured to develop a latent electrostatic image on the photoreceptor with the toner according to claim 1" (emphasis added). Instant claim 19 merely recites "a developing device configured to develop a latent electrostatic image with the developer according to claim 13" (emphasis added). The particular toner recited in the instant claims does not distinguish the structural elements in the instantly claimed apparatus and process cartridge from those in the apparatus and process cartridge in Ohkubo. A material (i.e., the toner) worked upon by the apparatus does not limit the apparatus claims. "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." See MPEP 2115. It is well settled, as stated in Ex parte Masham, 2 USPQ2d 1647, 1648 (Bd. Pat. App. & Int. 1987) that "a recitation with respect to the material intended to be worked upon by a claimed apparatus does not impose any

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structural limitations upon the claimed apparatus which differentiates it from the prior art apparatus satisfying the structural limitations of that claimed." Accordingly, the particular toner recited in the instant claims does not distinguish the instantly claimed process cartridge and apparatus from the process cartridge and apparatus disclosed by Ohkubo.

10. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by US 6,326,115 B1 (Nakanishi).

Nakanishi discloses a method of making a toner that meets the steps recited in instant claim 12. The method comprises the steps of: (1) dissolving a composition comprising the isocyanate-modified polyester ($\alpha 4$), which is capable of reacting with an active hydrogen, a colorant, and a ketimine compound, which has an active hydrogen, in an organic solvent to form an oily phase; (2) dispersing the oily phase of step (1) in an aqueous medium to form a dispersion; (3) removing the solvent in the dispersion of step (2) to form toner particles; (4) washing the toner particles of step (3); and (5) drying the toner particles. Col. 24, lines 4-9; col. 26, line 64, to col. 27, line 13; col. 28, lines 30-37; and example II-8 at col. 32.

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11. US 2003/0104297 A1 (Matsuda) was published on Jun. 5, 2003, and has an effective filing date of May 31, 2002. US 2003/0138717 A1 (Yagi) was published on Jul. 24, 2003, and has an effective filing date of Oct. 31, 2002. The inventive entities of Matsuda and of Yagi are not the same as the instant application. Accordingly, Matsuda and Yagi qualify as prior art under 35 U.S.C. 102(a) and under 35 U.S.C. 102(e).

12. Claims 1-5, 8, 11-16, 18, and 19 are rejected under 35 U.S.C. 102(a) as anticipated by Matsuda, as evidenced by US 6,835,520 B2 (Bando).

Claims 1-5, 8, 11-16, 18, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuda, as evidenced by Bando.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Matsuda discloses a toner comprising a binder resin comprising a urea-modified polyester resin and an unmodified polyester resin - low molecular weight polyester 1, carnauba wax

as the releasing agent, and carbon black associated with the tradename REGAL 400R manufactured by Cabot Co. See toner 13 in paragraphs 0125-0150. The toner has a number average particle size (Dn) of 5.52 μm and a volume average particle size (Dv) of 6.03 μm , and a ratio of Dv/Dn of 1.09. See paragraph 0150. The Dv and ratio Dv/Dn are within the ranges recited in instant claims 1 and 11. Low molecular weight polyester 1 has a Tg of 43°C, which is within the range of 35 to 55°C recited in instant claim 8. The weight ratio of the urea-modified polyester to the low polyester resin 1 is about 0.5, which is within the ratio range of 5/95 to 80/20 recited in instant claim 5. The weight ratio was determined by the information provided in toner 13 of Matsuda. Matsuda does not disclose that the carbon black associated with the tradename REGAL 400R has a pH as recited in instant claims 1 and 11. However, it is well known in the carbon black art that carbon black associated with the trademark REGAL 400R manufactured by Cabot Co. has a pH of 4.0, which is within the pH range of "not greater than 7" recited in instant claims 1 and 11. See Bando, col. 36, line 62-63. Accordingly, carbon black associated with the tradename REGAL 400R meets the carbon black limitations recited in the instant claims. Matsuda further discloses a two-component developer comprising the toner and a carrier. Example 13 at paragraph 0165. The Matsuda toner

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meets the one-component developer recited in instant claim 15. The recitation "one-component developer" in claim 15 does not distinguish the composition recited in instant claim 15 from the toner disclosed by Matsuda.

The Matsuda toner 13 is obtained by: (1) preparing a master batch comprising the carbon black and a polyester resin; (2) preparing material solution 1 comprising the carnauba wax and the low molecular weight polyester 1; (3) forming a pigment-wax dispersion by mixing the master batch of step (1), the material solution 1, and additional low molecular weight polyester 1; (4) mixing the pigment-wax dispersion of step (3), a prepolymer comprising isocyanate groups, which is capable of reacting with an active hydrogen to form the urea-modified polyester, and ketimine compound 1, which has an active hydrogen, in an organic solvent; (5) dispersing the mixture of step (4) in an aqueous medium comprising resin particles having an average particle size of 0.1 μm (i.e., 100 nm), while reacting ketimine compound 1 with the prepolymer to form toner particles; (6) removing the organic solvent from the dispersion of step (5); (7) washing the toner particles of step (6); and (8) drying the toner particles. The Matsuda process steps meets the product-by process limitations recited in instant claims 1-4, and the process steps recited in instant claim 12.

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Matsuda further discloses an image forming apparatus that meets the apparatus recited instant claim 19. The Matsuda apparatus comprises a photoreceptor 1 and a developing means 4. See Fig. 1 and paragraphs 0086-0088. The developing means 4 comprises a tank 40 which contains the developer described above. Paragraphs 0089 and 0165. Matsuda also discloses an imaging process that meets the steps recited in instant claim 18. Paragraph 0088 and example 13 at paragraph 0165.

13. Claims 1-8, 11-16, 18, and 19 are rejected under 35 U.S.C. 102(a) as anticipated by Yagi, as evidenced by Bando.

Claims 1-8, 11-16, 18, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Yagi, as evidenced by Bando.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Yagi discloses a toner comprising a binder resin comprising a urea-modified polyester resin and an unmodified polyester resin - low molecular weight polyester 1, carnauba wax as the releasing agent, and carbon black associated with the tradename

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REGAL 400R manufactured by Cabot Co. See paragraphs 0244-0262; and example 1 in paragraphs 0263-0273. The toner has a number average particle size (Dn) of 5.52 μm and a volume average particle size (Dv) of 6.03 μm , and a ratio of Dv/Dn of 1.09. See paragraph 0273. The Dv and ratio Dv/Dn are within the ranges recited in instant claims 1 and 11. Low molecular weight polyester 1 has a Tg of 43°C, which is within the range of 35 to 55°C recited in instant claim 8. Yagi further discloses that the polyester may have a peak molecular weight of 1,000 to 30,000, which meets the limitation recited in instant claim 7.

Paragraph 0151. The weight ratio of the urea-modified polyester to low polyester resin 1 is about 0.6, which is within the ratio range of 5/95 to 80/20 recited in instant claim 5. The weight ratio was determined by the information provided in example 1 of Yagi. Yagi does not disclose that the carbon black associated with the tradename REGAL 400R has a pH as recited in instant claims 1 and 11. However, it is well known in the carbon black art that carbon black associated with the trademark REGAL 400R manufactured by Cabot Co. has a pH of 4.0, which is within the pH range of "not greater than 7" recited in instant claims 1 and 11. See Bando, col. 36, line 62-63. Accordingly, carbon black associated with the tradename REGAL 400R meets the carbon

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black limitations recited in the instant claims. Yagi also discloses that the toner can be used in a two-component developer comprising a carrier or as a one-component developer, thereby meeting the developer limitations recited in instant claims 13-15. Paragraphs 0220 and 0224.

Yagi further discloses another toner comprising a binder resin comprising a urea-modified polyester resin and the unmodified polyester resin 3, which has an acid number of 4.9 mg KOH/g, carnauba wax as the releasing agent, and carbon black associated with the tradename REGAL 400R manufactured by Cabot Co. Paragraph 0153, 0251, and 0290-0292; and example 6 at paragraph 0300. The acid number of 4.9 mg KOH/g is within the range of 1 to 15 mg KOH/g recited in instant claim 4. That toner has a number average particle size (D_n) of 5.64 μm and a volume average particle size (D_v) of 7.05 μm , and a ratio of D_v/D_n of 1.25. See paragraph 0273. The D_v and ratio D_v/D_n are within the ranges recited in instant claims 1 and 11. Example 6 at paragraph 0300.

Both Yagi toners are obtained by: (1) preparing a master batch comprising the carbon black and a polyester resin; (2) preparing a material solution comprising the carnauba wax and the low molecular weight polyester; (3) forming a pigment-wax dispersion by mixing the master batch of step (1), the

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material solution, and additional low molecular weight polyester; (4) mixing the pigment-wax dispersion of step (3), a prepolymer comprising isocyanate groups, which is capable of reacting with an active hydrogen to form the urea-modified polyester, and a ketimine compound, which has an active hydrogen, in an organic solvent; (5) dispersing the mixture of step (4) in an aqueous medium comprising resin particles, while reacting the ketimine compound with the prepolymer to form toner particles; (6) removing the organic solvent from the dispersion of step (5); (7) washing the toner particles of step (6); and (8) drying the toner particles. Paragraphs 0252-0273 and 0292-0300. The Yagi process steps meets the product-by process limitations recited in instant claims 1-4, and the process steps recited in instant claim 12.

Yagi further discloses an image forming apparatus that meets the apparatus recited instant claim 19. The Yagi apparatus comprises a photoreceptor 1 and a developing device 4. See Fig. 1 and paragraphs 0228-0230. Yagi further discloses a toner container shown in Fig. 2. Paragraph 0236. Yagi also discloses an imaging process that meets the steps recited in instant claim 18. Paragraph 0229.

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14. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0142265 A1 (Tomita), as evidenced by Bando.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Tomita discloses a toner comprising a binder resin comprising a urea-modified polyester resin and an unmodified polyester resin - low molecular weight polyester 2, an ester wax as the releasing agent, and carbon black associated with the tradename REGAL 400R manufactured by Cabot Co. See paragraphs 0210-0215, 0217-0224, 0243-0245; and example 7 in paragraphs 0246. The toner has a number average particle size (D_n) of $3.4 \mu\text{m}$ and a volume average particle size (D_v) of $4.0 \mu\text{m}$, and a ratio of D_v/D_n of 1.18. The toner has a spindle shape which meets the shape limitations recited in instant claims 9 and 10. See paragraph 0246 and Table 1 at page 22, example 7. The D_v and ratio D_v/D_n are within the ranges recited in instant claims 1 and 11. Low molecular weight polyester 2 has an acid value of 15, a peak molecular weight of 5,200, and a

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Tg of 43°C, each of which meets the limitations recited in instant claims 6, 7, and 8, respectively. Paragraph 0243. The weight ratio of the urea-modified polyester to low polyester resin 2 is about 0.4, which is within the ratio range of 5/95 to 80/20 recited in instant claim 5. The weight ratio was determined by the information provided in example 7 of Tomita. Tomita does not disclose that the carbon black associated with the tradename REGAL 400R has a pH as recited in instant claims 1 and 11. However, it is well known in the carbon black art that carbon black associated with the trademark REGAL 400R manufactured by Cabot Co. has a pH of 4.0, which is within the pH range of "not greater than 7" recited in instant claims 1 and 11. See Bando, col. 36, line 62-63. Accordingly, carbon black associated with the tradename REGAL 400R meets the carbon black limitations recited in the instant claims. Tomita also discloses that the toner can be used in a two-component developer comprising a carrier or as a one-component developer, thereby meeting the developer limitations recited in instant claims 13-15. Paragraphs 0150 and 0152.

The Tomita toner 7 is obtained by: (1) preparing a master batch comprising the carbon black and a polyester resin; (2) preparing a material solution comprising the ester wax and the low molecular weight polyester; (3) forming a pigment-wax

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dispersion by mixing the master batch of step (1), the material solution, and additional low molecular weight polyester;

(4) mixing the pigment-wax dispersion of step (3), a prepolymer comprising isocyanate groups, which is capable of reacting with an active hydrogen to form the urea-modified polyester, and a ketimine compound, which has an active hydrogen, in an organic solvent; (5) dispersing the mixture of step (4) in an aqueous medium comprising resin particles, while reacting the ketimine compound with the prepolymer to form toner particles;

(6) removing the organic solvent from the dispersion of step (5); (7) washing the toner particles of step (6); and (8) drying the toner particles. Paragraphs 0213, 0217-0224, 0240, and 0244-0246. The Tomita process steps meets the product-by process limitations recited in instant claims 1-4, and the process steps recited in instant claim 12.

Tomita further discloses an image forming apparatus that meets the apparatus comprising a process cartridge as recited instant claim 17. The apparatus meets the apparatus components recited in instant claim 19. The Tomita apparatus comprises a process cartridge 10, which comprise a photoreceptor 11, a charger 12, and a developing unit 13. See Fig. 7 and paragraphs 0203-0204. Tomita further discloses that the developing unit comprises a toner container. Paragraph 0205,

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lines 1-3. Tomita also discloses an imaging process that meets the steps recited in instant claim 18. Paragraph 0032.

15. Claims 1-7, 11, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi combined with combined with US 6,080,519 (Ishiyama) and US 5,547,802 (Kawase).

Nakanishi discloses a toner comprising a binder resin comprising a urea-modified polyester resin and an unmodified polyester resin (ii-2), and carbon black associated with the tradename MA100 manufactured by Mitsubishi Gas Chemical Co. Col. 22, lines 64-65; col. 24, lines 4-9; col. 26, line 64, to col. 27, line 13; col. 28, lines 30-37; and example II-8 at col. 32. The unmodified polyester (ii-2) has an acid value of 7 and a peak molecular weight of 4,300, each of which meets the limitations recited in instant claims 6 and 7, respectively. Col. 24, lines 4-9. The weight ratio of the urea-modified polyester to unmodified polyester resin (ii-2) is about 0.4, which is within the ratio range of 5/95 to 80/20 recited in instant claim 5. The weight ratio was determined by the information provided in example II-8 of Nakanishi. Nakanishi does not disclose that the carbon black associated with the tradename MA100 has a pH as recited in instant claims 1 and 11. However, it is well known in the carbon black art that carbon

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black associated with the trademark MA100 manufactured by Mitsubishi Chemical Co. has a pH of 3.5, which is within the pH range of "not greater than 7" recited in instant claims 1 and 11. See Bando, col. 36, line 35-36 and 47. Accordingly, carbon black associated with the tradename MA100 meets the carbon black limitations recited in the instant claims. Nakanishi also discloses that the toner can be used in a two-component developer comprising a carrier or as a one-component developer, thereby meeting the developer limitations recited in instant claims 13-15. Col. 17, lines 52-60.

The Nakanishi toner is obtained by the process described in paragraph 10 above, which is incorporated herein by reference. The process steps meets the product-by process limitations recited in instant claims 1 and 2.

Instant claims 3 and 4 are written in product-by-process format. Nakanishi does not disclose the step of dispersing the carbon black in a match batch resin as recited in instant claims 3 and 4. However, as discussed above, the Nakanishi toner meets the toner compositional limitations recited in instant claims 3 and 4, and is made by a process that meets the product-by-process limitations recited in instant claim 1, which claims 3 and 4 depend from. Thus, it appears that the toner disclosed by Nakanishi is the same or substantially the same as

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the toner made by the process recited in the instant claims.

The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

Nakanishi does not disclose that toner has a volume average particle size D_v and a ratio of D_v to D_n , the number average particle size, recited in instant claims 1 and 11.

Ishiyama teaches that when the volume average particle size of the toner is less than 2 μm , the charge property of the toner is insufficient and lowers the "developing property" (i.e., developing quality). If the volume average particle size is greater than 9 μm , the resolution of the image is degraded. Col. 7, lines 22-27. The range of 2 to 9 μm overlaps the range of 3 to 7 μm recited in instant claim 4. Thus, the toner art recognizes the volume average particle size as a result-effective variable. The variation of a result-effective variable is presumably within the skill of the person having ordinary skill in the art.

Kawase teaches that in order to obtain images with excellent dot reproduction and sharpness, "it is preferable that the volume mean diameter (D_v) of the toner particles be in the range of 3 to 9 μm , and that the ratio of the volume mean diameter (D_v) to the number-average particle diameter (D_p) . . .

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be in the range of 1.00 to 1.15." Col. 18, lines 49-54. The range of 1.00 to 1.15 is within the range of 1.00 to 1.25 recited in instant claims 1 and 11. The range of 3 to 9 μm overlaps the range of 2 to 7 μm recited in instant claims 1 and 11.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Ishiyama and Kawase, to adjust, through routine experimentation, the particle size of the toner disclosed in Nakanishi, such that the resultant toner has a volume average particle size and a ratio D_v/D_p that are within the scope of instant claims 1 and 11, because that person would have had a reasonable expectation of successfully obtaining a toner that images with improved dot production and sharpness.

16. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okkubo combined with (1) Nakanishi, as evidenced by Bando; (2) Kawase; and (3) Ishiyama.

Ohkubo discloses an image forming apparatus and a process cartridge as described in paragraph 9 above, which is incorporated herein by reference. As discussed in paragraph 9 above, the Ohkubo apparatus and process cartridge meet the components recited in instant claims 17 and 19, but for the

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particular toner recited in the instant claims. The Ohkubo developing device 5 comprises a toner container. See Fig. 1. Ohkubo further discloses an image forming process that meets the steps recited in instant claim 18, but for the particular toner. Col. 5-26.

As discussed above, Ohkubo does not exemplify the use of a toner as recited in the instant claims. However, Ohkubo does not limit the type of toner used.

Nakanishi, as evidenced by Bando, combined with the teachings of Ishiyama and Kawase render obvious a developer comprising a toner, as described in paragraph 15 above, which is incorporated herein by reference. That developer meets the toner and developer limitations recited in instant claims 16-19. According to Nakanishi, the Nakanishi toner has excellent powder fluidity, developing ability, and transferability. The toner also has excellent storage stability under heat and superior low-temperature fixing ability and hot-offset resistance. Nakanishi, col. 2, lines 61-67, and Table 2 at col. 33, Toner (T-II8) of example II-8.

It would have been obvious for a person having ordinary skill in the art to use the developer rendered obvious over the combined teachings of Nakanishi, as evidenced by Bando, Ishiyama, and Kawase, as the developer in the image forming

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apparatus, process cartridge, and image forming process disclosed by Ohkubo, because that person would have had a reasonable expectation of successfully obtaining an image forming apparatus, a process cartridge, a toner container, and an image forming process that provide image that have improved dot production and sharpness and that can be fixed with low-temperatures and without hot-offset.

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1-5, 11-16, and 18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 6,849,369 B2 (Yagi'369) in view of Japanese Patent 06-175403 (JP'403). See

the Japanese Patent Office (JPO) machine-assisted translation of JP'403 for cites.

Reference claim 7, which depends from reference claim 6, which in turn depends from reference claim 5, which in turn depends from reference claim 1, recites a toner comprising a binder resin comprising an urea-modified polyester resin and an unmodified polyester resin in a weight ratio of 5/95 to 80/20, and a colorant. The binder resin meets the binder resin limitation recited in instant claims 1 and 5. The toner has a ratio of the volume average particle size (D_v) to the number average particle size (D_n) of 1.00 to 1.40. Reference claim 2, which depends from reference claim 1, requires that the ratio D_v/D_n be from 1.00 to 1.20, which is within the range of 1.00 to 1.25 recited in instant claims 1 and 11. Reference claim 14, which depends from reference claim 1, requires that the toner D_v be from 4 to 8 μm , which overlaps the range of 3 to 7 μm recited in instant claims 1 and 11. Reference claim 17, which depends from reference claim 1, recites a developer comprising the toner and a carrier. Reference claim 22, which depends from reference claim 1, recites an imaging process comprising the steps of developing an electrostatic latent image on an image carrier with the toner, and transferring the toned image to a receiving

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member. Reference claim 23, which depends of reference claim 1, recites a toner container containing the toner.

Yagi'369 does not recite that the colorant in the toner recited in reference claim 1 is a carbon black having a pH of not greater than 7 as recited in instant claims 1 and 11.

However, a carbon black having a pH of not greater than 7 is well known in the toner prior art. JP'403 teaches a carbon black having an ultraviolet absorption of 0.03, a BET specific surface area of 126 m²/g, a DBP oil absorption of 100 ml/100g, and a pH of 3. See the JPO translation, paragraph 0020.

According to JP'403, when a toner comprises such a carbon black as the toner colorant, the toner has improved electrostatic charge build-up, and continuously provides images with stable image density with "no image dirt, such as fogging." The JP'403 carbon black prevents toner scattering in the printer or copying machine. Translation, paragraph 0037. JP'403 further teaches that the use of "acidic" carbon black is desirable to improve the toner electrification property. The "acidic" carbon black has improved miscibility with the toner resin. Translation, paragraph 0013.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Yagi'369 and the teachings of JP'403, to use the JP'403 carbon

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black as the colorant in toner recited in Yagi'369, and to adjust, through routine experimentation, the Dv and Dn of the toner, such that the resultant toner has a Dv and a ratio Dv/Dn as recited in the instant claims, because that person would have had a reasonable expectation of successfully of obtaining a toner, a developer, a toner container, and an image forming process that continuously provide toner images with stable image density without fog.

The toner rendered obvious over the subject matter recited in Yagi'369 combined with the teachings of JP'403 meets the one-component developer recited in instant claim 15. The recitation "one-component developer" in claim 15 does not distinguish the composition recited in instant claim 15 from the toner rendered obvious over the subject matter recited in Yagi'369 combined with the teachings of JP'403.

Instant claims 1-4 are written in product-by-process format. The claims in Yagi'369 do not recite that the toner is obtained by the process steps recited in instant claims 1-4. However, as discussed supra, the toner rendered obvious over the subject matter recited in Yagi'369 combined with the teachings of JP'403 meets the toner limitations recited in instant claims 1-4. Thus, it appears that such a toner is the same or substantially the same as the toner made by the process

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limitations recited in the instant claims. The burden is on applicants to prove otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

19. Claims 1-8, 11, 13, and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,740,460 B2 (Tomita'460) in view of JP'403. See the JPO machine-assisted translation of JP'403 for cites.

Reference claim 2, which depends from reference claim 1, recites a toner comprising a binder resin comprising a modified polyester resin and an unmodified polyester resin in a weight ratio of 5/95 to 80/20. The binder resin meets the binder resin limitation recited in instant claims 1 and 5. The toner has a ratio of the volume average particle size (D_v) to the number average particle size (D_n) of 1.05 to 1.25, which is within the range of 1.00 to 1.25 recited in instant claims 1 and 11. The toner has a D_v of 3 to 10 μm , which overlaps the range of 3 to 7 μm recited in instant claims 1 and 11. Reference claim 3, which depends from reference claim 1, requires that the unmodified polyester resin have a main peak in the molecular weight range of 1,000 to 30,000, which meets the unmodified polyester resin limitation recited in instant claim 7.

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Reference claim 4, which depends from reference claim 1, requires that the unmodified polyester resin have an acid value of 1 to 30 mg KOH/g, which overlaps the range of 1 to 15 mg KOH/g recited in instant claim 6. Reference claim 5, which depends from reference claim 1, requires that the unmodified polyester resin have a Tg of 40 to 70°C, which overlaps the range of 35 to 55°C recited in instant claim 8. Reference claims 7 and 8, which both depend from reference claim 1, require that the toner be made by process steps that meet the product-by-process limitations recited in instant claims 1 and 2.

Tomita'460 does not recite that the toner in reference claim 1 comprises a colorant and that the colorant is a carbon black having a pH of not greater than 7 recited in instant claims 1 and 11.

However, the use of colorants in toners is well known in the toner art, as shown in JP'403. Translation, paragraphs 0003 and 0009. JP'403 teaches a carbon black having a pH of 3. The discussion of JP'403 in paragraph 18 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Tomita'460 and the teachings of JP'403, to use the JP'403 carbon black as the colorant in toner recited in Tomita'460, and to

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adjust, through routine experimentation, the Dv and Dn of the toner, such that the resultant toner has a Dv and a ratio Dv/Dn and comprises a non-modified polyester resin as recited in the instant claims, because that person would have had a reasonable expectation of successfully of obtaining a toner that continuously provides toner images with stable image density without fog.

The toner rendered obvious over the subject matter recited in Tomita'460 combined with the teachings of JP'403 meets the one-component developer recited in instant claim 15. The recitation "one-component developer" in claim 15 does not distinguish the composition recited in instant claim 15 from the toner rendered obvious over the subject matter recited in Tomita'460 combined with the teachings of JP'403.

Instant claims 3 and 4 are written in product-by-process format. The claims in Tomita'460 do not recite that the toner is obtained by the process steps recited in instant claims 3 and 4. However, as discussed supra, the toner rendered obvious over the subject matter recited in Tomita'460 combined with the teachings of JP'403 meets the toner limitations recited in instant claims 3 and 4. Thus, it appears that such a toner is the same or substantially the same as the toner made by the process limitations recited in the instant claims. The burden is on

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applicants to prove otherwise. Marosi, supra; Thorpe, supra;
MPEP 2113.

20. Claims 1-4, 9, 11, 13-16, and 18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,852,462 B2 (Emoto'462) in view of JP'403. See the JPO machine-assisted translation of JP'403 for cites.

Reference claim 5, which depends from reference claim 1, recites a toner comprising a binder resin comprising a modified polyester resin and an unmodified polyester resin, and a colorant. The binder resin meets the binder resin limitation recited in instant claim 1. The toner has a ratio of the volume average particle size (D_v) to the number average particle size (D_n) of 1.00 to 1.30. The toner has a D_v of 3.0 to 7.0 μm , which meets the range of 3 to 7 μm recited in instant claims 1 and 11. Reference claim 2, which depends from reference claim 1, requires that the ratio D_v/D_n be from 1.00 to 1.20, which is within the range of 1.00 to 1.25 recited in instant claims 1 and 11. Reference claim 4, which depends from reference claim 1, requires that the toner have the shape of a spindle, which meets the toner shape limitation recited in instant claim 9. Reference claim 7, which depends from

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reference claim 1, requires that the toner be made by process steps that meet the product-by-process limitations recited in instant claims 1 and 2. Reference claim 13, which depends from reference claim 1, recites a developer comprising the toner and a carrier. Reference claim 14, which depends from reference claim 1, recites an imaging process comprising the steps of developing an electrostatic latent image on an image carrier with the toner, and transferring the toned image to a receiving member. Reference claim 15, which depends from reference claim 1, recites an image forming apparatus that comprises a developing unit. Because a developing unit contains a toner, it meets the structural limitation of a toner container recited in instant claim 16.

Emoto'462 does not recite that the colorant in the toner in reference claim 1 is a carbon black having a pH of not greater than 7 recited in instant claims 1 and 11.

However, JP'403 teaches a carbon black having a pH of 3. The discussion of JP'403 in paragraph- 18 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Emoto'462 and the teachings of JP'403, to make and use a toner as recited in the instant claims wherein the resultant toner

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comprises the JP'403 carbon black as the colorant, and has a Dv and a ratio Dv/Dn as recited in the instant claims, because that person would have had a reasonable expectation of successfully obtaining a toner, a developer, an image forming process, and a toner container that continuously provide toner images with stable image density without fog.

The toner rendered obvious over the subject matter recited in Emoto'462 combined with the teachings of JP'403 meets the one-component developer recited in instant claim 15. The recitation "one-component developer" in claim 15 does not distinguish the composition recited in instant claim 15 from the toner rendered over the subject matter recited in Emoto'462 combined with the teachings of JP'403.

Instant claims 3 and 4 are written in product-by-process format. The claims in Emoto'462 do not recite that the toner is obtained by the process steps recited in instant claims 3 and 4. However, as discussed supra, the toner rendered obvious over the subject matter recited in Emoto'462 combined with the teachings of JP'403 meets the toner limitations recited in instant claims 3 and 4. Thus, it appears that such a toner is the same or substantially the same as the toner made by the process limitations recited in the instant claims. The burden is on

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applicants to prove otherwise. Marosi, supra; Thorpe, supra;
MPEP 2113.

21. Claims 1-4, 11, 13-16, and 19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,824,945 B2 (Emoto'945) in view of JP'403. See the JPO machine-assisted translation of JP'403 for cites.

Reference claim 3, which depends from reference claim 1, recites a toner comprising a binder resin comprising a modified polyester resin and a colorant. The binder resin meets the binder resin limitation recited in instant claim 1. The toner is made by a process that meets the product-by-process limitations recited in instant claims 1 and 2. The toner has a ratio of the volume average particle size (D_v) to the number average particle size (D_n) of 1.00 to 1.20, and a D_v of 3.0 to 7.0 μm , which meets the ranges recited in instant claims 1 and 11. Reference claim 8, which depends from reference claim 1, recites a developer comprising the toner and a carrier. Reference claim 9, which depends from reference claim 1, recites a toner container comprising the toner. Reference 13, which depends from reference claim 9, recites an image forming

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apparatus that comprises a photoconductor and a developer comprising the container of reference claim 9.

Emoto'045 does not recite that the colorant in the toner in reference claim 1 is a carbon black having a pH of not greater than 7 recited in instant claims 1 and 11.

However, JP'403 teaches a carbon black having a pH of 3. The discussion of JP'403 in paragraph 18 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Emoto'945 and the teachings of JP'403, to make and use a toner as recited in the instant claims wherein the resultant toner comprises the JP'403 carbon black as the colorant and has a D_v and a ratio D_v/D_n as recited in the instant claims, because that person would have had a reasonable expectation of successfully obtaining a toner, a developer, and an image forming apparatus that continuously provide toner images with stable image density without fog.

The toner rendered obvious over the subject matter recited in Emoto'945 combined with the teachings of JP'403 meets the one-component developer recited in instant claim 15. The recitation "one-component developer" in claim 15 does not distinguish the composition recited in instant claim 15 from the

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toner rendered obvious over the subject matter recited in Emoto'945 combined with the teachings of JP'403.

Instant claims 3 and 4 are written in product-by-process format. The claims in Emoto'945 do not recite that the toner is obtained by the process steps recited in instant claims 3 and 4. However, as discussed supra, the toner rendered obvious over the subject matter recited in Emoto'945 combined with the teachings of JP'403 meets the toner limitations recited in instant claims 3 and 4. Thus, it appears that such a toner is the same or substantially the same as the toner made by the process limitations recited in the instant claims. The burden is on applicants to prove otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

22. The following is provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

23. Claims 1-5, 9-11, 13, 15, 16, 18, and 19 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-25 of copending Application No. 10/712,026 (Application'026) in view

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of JP'403. See the JPO machine-assisted translation of JP'403 for cites.

Reference claim 11, which depends from reference claim 8, which in turn depends on reference claim 1, recites a toner comprising a binder resin comprising a modified polyester resin and an unmodified polyester resin in a weight ratio of 5/95 to 80/20, and a colorant. The binder resin meets the binder resin limitation recited in instant claims 1 and 5. Reference claim 14, which depends from reference claim 1, requires that the toner have a volume average particle size of 3.0 to 8.0 μm , which overlaps the range of 3 to 7 μm recited in instant claims 1 and 11, and a ratio of the volume average particle size (D_v) to the number average particle size (D_n) of 1.00 to 1.20. The ratio D_v/D_n of 1.00 to 1.20 is within the range of 1.00 to 1.25 recited in instant claims 1 and 11. Reference claim 17, which depends from reference claim 16, which in turn depends from reference claim 1, recites that the toner have the shape of a spindle as recited in instant claims 9 and 10. Reference claims 9 and 10, which both depend from reference claim 8, which depends from reference claim 1, require that the modified polyester resin be made by process steps that meet the product-by-process limitations recited in instant claims 1 and 2. Reference claim 19 recites an imaging process comprising the

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steps of developing an electrostatic latent image on an image carrier with a toner, which is the same as the toner recited in reference claim 1, and transferring the toned image to a receiving member. Reference claim 21 recites a developing device that holds a toner, which is the same as the toner recited in reference claim 1. Reference claim 24 recites an image forming apparatus that comprises a photoconductor and a developing unit.

Application'026 does not recite that the colorant in the toner recited in reference claim 1 is a carbon black having a pH of not greater than 7 recited in instant claims 1 and 11.

However, a carbon black having a pH of not greater than 7 is well known in the toner prior art. JP'403 teaches a carbon black having a pH of 3. The discussion of JP'403 in paragraph 18 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in Application'026 and the teachings of JP'403, to use the JP'403 carbon black as the colorant in toner recited in Application'026, and to adjust, through routine experimentation, the D_v and D_n of the toner, such that the resultant toner has a D_v and a ratio D_v/D_n as recited in the instant claims, because that person would have had a reasonable expectation of

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successfully of obtaining a toner, a toner container, an image forming process, and an image forming apparatus that continuously provide toner images with stable image density without fog.

The toner rendered obvious over the subject matter recited in Application'026 combined with the teachings of JP'403 meets the one-component developer recited in instant claim 15. The recitation "one-component developer" in claim 15 does not distinguish the composition recited in instant claim 15 from the toner rendered obvious over the subject matter recited in Application'026 combined with the teachings of JP'403.

Instant claims 3 and 4 are written in product-by-process format. The claims in Yagi'369 do not recite that the toner is obtained by the process steps recited in instant claims 3 and 4. However, as discussed supra, the toner rendered obvious over the subject matter recited in Application'026 combined with the teachings of JP'403 meets the toner limitations recited in instant claims 3 and 4. Thus, it appears that such a toner is the same or substantially the same as the toner made by the process limitations recited in the instant claims. The burden is on applicants to prove otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

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24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD
Mar. 2, 2005

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